Applied Optics and Propagation (POA)

Ernesto Ciaramella
Course Content

- Electro-magnetic waves are the key means of today communication networks

- This course will provide the fundamentals of electromagnetic fields, and present in detail the applications

- The course provides the fundamentals of geometrical optics (refraction and reflection, lenses, microscopes etc.), of wave optics (interference, diffraction, polarization) and quantum optics (concept of photon emission properties / absorption of light, lasers)
Applied Optics and Propagation

• Aim:
  – to introduce the fundamentals of lightwaves and radiowaves, which are key elements in today communication systems
  – deals with the different frameworks for electromagnetic description (from ray optics to quantum optics)

• Course Responsible: Prof. Ernesto Ciaramella

• Semester: 1

• Credits: 6 ECTS

• Exam: Written test
Topics

- The course will provide the basic concepts about the nature and use of electromagnetic fields, which are the basis of wired and wireless telecommunications
- **fundamentals of applied optics**
  - introduces the concepts and fundamentals on lightwaves, their nature, their description and their physical characteristics
- also illustrates the main areas of application
Contact Information

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